

## ATMOSPHERIC WIND AND PRESSURE EXCITATION OF NUTATION

R.S. Gross, D.H. Boggs, and J.O. Dickey (all at Jet Propulsion Laboratory, California Institute of Technology, 4800 Oak Grove Drive, Pasadena, CA 91109-8099 USA; email: rsg@logos.jpl.nasa.gov)

Within a celestial, space-fixed reference frame the notational motions of the solid Earth occur at periods associated with the orbital motions of the Earth and Moon (e.g., fortnightly, monthly, annual, etc.). However, due to the Earth's sidereal rotation, when viewed from within a terrestrial, body-fixed reference frame these notational motions of the solid Earth appear at retrograde nearly diurnal frequencies. Therefore, retrograde nearly diurnal changes in atmospheric wind and pressure have the potential to excite notational motions of the solid Earth. Since mid-1992, determinations of atmospheric angular momentum (AAM) excitation functions at 6-hour intervals have been available from the operational analysis models of (1) the US National Meteorological Center, (2) the European Centre for Medium-Range Weather Forecasts, and (3) the Japan Meteorological Agency. In addition, AAM excitation functions at 6-hour intervals have been computed by us from observations of atmospheric wind and pressure taken during the First Global GARP Experiment (FGGE) which was conducted in 1979. Predictions of the effect on the nutations of nearly diurnal atmospheric wind and pressure variations based upon these AAM excitation functions will be presented.